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**BEST AVAILABLE COPY**

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Phe Val Thr Val Leu Glu Val Ser Ser Ala Ser Ala Ala His Thr Gly
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Ala Ala Val Leu Val Leu Leu Val Ile Val Ile Ile Ser Leu Ile Val  
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Leu Val Val Ile Trp Lys Gln Lys Pro Arg Tyr Glu Ile Arg Trp Arg  
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Val Ile Glu Ser Ile Ser Pro Asp Gly His Glu Tyr Ile Tyr Val Asp  
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Lys Tyr Ser Asp Ile Gln Arg Ser Leu Tyr Asp Arg Pro Ala Ser Tyr  
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Gln Val Ala Arg Gly Met Glu Phe Leu Ala Ser Lys Asn Cys Val His  
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Tyr Val Ser Lys Gly Ser Thr Phe Leu Pro Val Lys Trp Met Ala Pro  
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Tyr Gly Ile Leu Leu Trp Glu Ile Phe Ser Leu Gly Gly Thr Pro Tyr  
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Pro Gly Met Met Val Asp Ser Thr Phe Tyr Asn Lys Ile Lys Ser Gly  
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Met Val Lys Cys Trp Asn Ser Glu Pro Glu Lys Arg Pro Ser Phe Tyr  
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Ser Tyr Glu Lys Ile His Leu Asp Phe Leu Lys Ser Asp His Pro Ala  
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Val Ala Arg Met Arg Val Asp Ser Asp Asn Ala Tyr Ile Gly Val Thr  
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Tyr Lys Asn Glu Glu Asp Lys Leu Lys Asp Trp Glu Gly Gly Leu Asp  
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Glu Ser Ser Asp Val Glu Ile Arg Asn Glu Glu Asn Asn Ser Gly Leu  
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Glu Gly Arg His Ile Tyr Ile Tyr Val Pro Asp Pro Asp Val Ala Phe  
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Lys Ala Thr Ser Glu Leu Asp Leu Glu Met Glu Ala Leu Lys Thr Val  
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Leu Ala Asn Asn Val Ser Asn Ile Ile Thr Glu Ile His Ser Arg Asp  
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Ala Val Lys Met Leu Lys Pro Thr Ala Arg Ser Ser Glu Lys Gln Ala  
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Asn Arg Asp Ser Phe Leu Ser His His Pro Glu Lys Pro Lys Lys Glu  
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Lys Tyr Ser Asp Ile Gln Arg Ser Leu Tyr Asp Arg Pro Ala Ser Tyr  
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Cys Trp Asn Ser Glu Pro Glu Lys Arg Pro Ser Phe Tyr His Leu Ser  
930 935 940

Glu Ile Val Glu Asn Leu Leu Pro Gly Gln Tyr Lys Lys Ser Tyr Glu  
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Lys Ile His Leu Asp Phe Leu Lys Ser Asp His Pro Ala Val Ala Arg  
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Glu Ser Ser Asp Val Glu Ile Arg Asn Glu Glu Asn Asn Ser Gly Leu  
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Glu Gly Arg His Ile Tyr Ile Tyr Val Pro Asp Pro Asp Val Ala Phe  
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Tyr Thr Ile Val Ala Gln Asn Glu Asp Ala Val Lys Ser Tyr Thr Phe	
395 400 405	
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Glu Leu Leu Thr Gln Val Pro Ser Ser Ile Leu Asp Leu Val Asp Asp	
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His His Gly Ser Thr Gly Gly Gln Thr Val Arg Cys Thr Ala Glu Gly	
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Thr Pro Leu Pro Asp Ile Glu Trp Met Ile Cys Lys Asp Ile Lys Lys	
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Cys Asn Asn Glu Thr Ser Trp Thr Ile Leu Ala Asn Asn Val Ser Asn	
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Ile Ile Thr Glu Ile His Ser Arg Asp Arg Ser Thr Val Glu Gly Arg	
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Val Thr Phe Ala Lys Val Glu Glu Thr Ile Ala Val Arg Cys Leu Ala	
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Thr Leu Arg Ser Glu Leu Thr Val Ala Ala Val Leu Val Leu Leu	
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Lys Pro Arg Tyr Glu Ile Arg Trp Arg Asp Ile Glu Ser Ile Ser Pro	
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Asp Gly His Glu Tyr Ile Tyr Val Asp Pro Met Gln Leu Pro Tyr Asp	
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Ser Arg Trp Glu Phe Pro Arg Asp Gly Leu Val Leu Gly Arg Val Leu	
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Ser Arg Ser Gln Pro Val Met Lys Val Ala Val Lys Met Leu Lys Pro	
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Cys Thr Lys Ser Gly Pro Ile Tyr Ile Ile Thr Glu Tyr Cys Phe Tyr	
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Gly Asp Leu Val Asn Tyr Leu His Lys Asn Arg Asp Ser Phe Leu Ser	
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700 705 710	

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Pro Met Leu Glu Arg Lys Glu Val Ser Lys Tyr Ser Asp Ile Gln Arg		
745	750 755	
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Ser Leu Tyr Asp Arg Pro Ala Ser Tyr Lys Lys Ser Met Leu Asp		
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Cys Phe Gly Glu Ser Glu Val Ser Trp Gln Tyr Pro Met Ser Glu Glu  
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Glu Ser Ser Asp Val Glu Ile Arg Asn Glu Glu Asn Asn Ser Gly Leu  
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Phe Val Thr Val Leu Glu Val Ser Ser Ala Ser Ala Ala His Thr Gly  
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Leu Tyr Thr Cys Tyr Tyr Asn His Thr Gln Thr Glu Glu Asn Glu Leu  
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Glu Gly Arg His Ile Tyr Ile Tyr Val Pro Asp Pro Asp Val Ala Phe  
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Val Pro Leu Gly Met Thr Asp Tyr Leu Val Ile Val Glu Asp Asp Asp  
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Ser Ala Ile Ile Pro Arg Thr Thr Asp Pro Glu Thr Pro Val Thr  
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Leu His Asn Ser Glu Gly Val Val Pro Ala Ser Tyr Asp Ser Arg Gln  
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Gly Phe Asn Gly Thr Phe Thr Val Gly Pro Tyr Ile Cys Glu Ala Thr  
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Val Lys Gly Lys Lys Phe Gln Thr Ile Pro Phe Asn Val Tyr Ala Leu  
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Lys Ala Thr Ser Glu Leu Asp Leu Glu Met Glu Ala Leu Lys Thr Val  
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Tyr Lys Ser Gly Glu Thr Ile Val Val Thr Cys Ala Val Phe Asn Asn  
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Glu Val Val Asp Leu Gln Trp Thr Tyr Pro Gly Glu Val Lys Gly Lys  
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Tyr Thr Leu Thr Val Pro Glu Ala Thr Val Lys Asp Ser Gly Asp Tyr  
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Val Thr Ile Ser Val His Glu Lys Gly Phe Ile Glu Ile Lys Pro Thr  
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Phe Ser Gln Leu Glu Ala Val Asn Leu His Glu Val Lys His Phe Val  
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Val Glu Val Arg Ala Tyr Pro Pro Arg Ile Ser Trp Leu Lys Asn  
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Asn Leu Thr Leu Ile Glu Asn Leu Thr Glu Ile Thr Thr Asp Val Glu  
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Lys Ile Gln Glu Ile Arg Tyr Arg Ser Lys Leu Lys Leu Ile Arg Ala  
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Lys Glu Glu Asp Ser His Tyr Thr Ile Val Ala Gln Asn Asp  
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Leu Ala Asn Asn Val Ser Asn Ile Ile Thr Glu Ile His Ser Arg Asp  
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Leu Val Val Ile Trp Lys Gln Lys Pro Arg Tyr Glu Ile Arg Trp Arg  
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Asp Ile Glu Ser Ile Ser Pro Asp Gly His Glu Tyr Ile Tyr Val Asp  
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Asn Arg Asp Ser Phe Leu Ser His His Pro Glu Lys Pro Lys Lys Glu  
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Val Ile Leu Ser Phe Glu Asn Asn Gly Asp Tyr Met Asp Met Lys Gln  
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Lys Tyr Ser Asp Ile Gln Arg Ser Leu Tyr Asp Arg Pro Ala Ser Tyr  
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Gln Val Ala Arg Gly Met Glu Phe Leu Ala Ser Lys Asn Cys Val His  
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Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp Ile Met His Asp Ser Asn  
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Tyr Val Ser Lys Gly Ser Thr Phe Leu Pro Val Lys Trp Met Ala Pro  
850 855 860



Glu Ser Ile Phe Asp  Leu Tyr Thr Thr Leu Ser Asp Val  Ser  
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Tyr Arg Met Ala Lys Pro Asp His Ala Thr Ser Glu Val Tyr Glu Ile  
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His Leu Ser Glu Ile Val Glu Asn Leu Leu Pro Gly Gln Tyr Lys Lys  
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Leu	Glu	Met	Glu	Ala	Leu	Lys	Thr	Val	Tyr	Lys	Ser	Gly	Glu	Thr	Ile
			220						225					230	
gtg	gtc	acc	tgt	gct	gtt	ttt	aac	aat	gag	gtg	gtt	gac	ctt	caa	tgg
Val	Val	Thr	Cys	Ala	Val	Phe	Asn	Asn	Glu	Val	Val	Asp	Leu	Gln	Trp
			235					240					245		
act	tac	cct	gga	gaa	gtg	aaa	ggc	aaa	ggc	atc	aca	atg	ctg	gaa	gaa
Thr	Tyr	Pro	Gly	Glu	Val	Lys	Gly	Lys	Gly	Ile	Thr	Met	Leu	Glu	Glu
		250					255					260			
atc	aaa	gtc	cca	tcc	atc	aaa	ttg	gtg	tac	act	ttg	acg	gtc	ccc	gag
Ile	Lys	Val	Pro	Ser	Ile	Lys	Leu	Val	Tyr	Thr	Leu	Thr	Val	Pro	Glu
	265					270					275				
gcc	acg	gtg	aaa	gac	agt	gga	gat	tac	gaa	tgt	gct	gcc	cgc	cag	gct
Ala	Thr	Val	Lys	Asp	Ser	Gly	Asp	Tyr	Glu	Cys	Ala	Ala	Arg	Gln	Ala
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acc	agg	gag	gtc	aaa	gaa	atg	aag	aaa	gtc	act	att	tct	gtc	cat	gag
Thr	Arg	Glu	Val	Lys	Glu	Met	Lys	Lys	Val	Thr	Ile	Ser	Val	His	Glu
			300						305					310	
aaa	ggg	ttc	att	gaa	atc	aaa	ccc	acc	ttc	agc	cag	ttg	gaa	gct	gtc
Lys	Gly	Phe	Ile	Glu	Ile	Lys	Pro	Thr	Phe	Ser	Gln	Leu	Glu	Ala	Val
		315						320					325		
aac	ctg	cat	gaa	gtc	aaa	cat	ttt	gtt	gta	gag	gtg	cgg	gcc	tac	cca
Asn	Leu	His	Glu	Val	Lys	His	Phe	Val	Val	Glu	Val	Arg	Ala	Tyr	Pro
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Pro	Pro	Arg	Ile	Ser	Trp	Leu	Lys	Asn	Asn	Leu	Thr	Leu	Ile	Glu	Asn
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His	His	Gly	Ser	Thr	Gly	Gly	Gln	Thr	Val	Arg	Cys	Thr	Ala	Glu	Gly	
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Thr	Pro	Leu	Pro	Asp	Ile	Glu	Trp	Met	Ile	Cys	Lys	Asp	Ile	Lys	Lys	
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Cys	Asn	Asn	Glu	Thr	Ser	Trp	Thr	Ile	Leu	Ala	Asn	Asn	Val	Ser	Asn	
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Ile	Ile	Thr	Glu	Ile	His	Ser	Arg	Asp	Arg	Ser	Thr	Val	Glu	Gly	Arg	
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Lys	Asn	Leu	Leu	Gly	Ala	Glu	Asn	Arg	Glu	Leu	Lys	Leu	Val	Ala	Pro	
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gtg	att	gtg	atc	atc	tca	ctt	att	gtc	ctg	gtt	gtc	att	tgg	aaa	cag	2047
Val	Ile	Val	Ile	Ile	Ser	Leu	Ile	Val	Leu	Val	Val	Ile	Trp	Lys	Gln	
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Lys	Pro	Arg	Tyr	Glu	Ile	Arg	Trp	Ile	Ser	Pro	Asp	Gly	His	Glu	Tyr	
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Ile	Tyr	Val	Asp	Pro	Met	Gln	Leu	Pro	Tyr	Asp	Ser	Arg	Trp	Glu	Phe	
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cca	aga	gat	gga	cta	gtg	ctt	ggt	cgg	gtc	ttg	ggg	tct	gga	gcg	ttt	2191
Pro	Arg	Asp	Gly	Leu	Val	Leu	Gly	Arg	Val	Leu	Gly	Ser	Gly	Ala	Phe	
	585					590				595						
ggg	aag	gtg	gtt	gaa	gga	aca	gcc	tat	gga	tta	agc	cgg	tcc	caa	cct	2239
Gly	Lys	Val	Val	Glu	Gly	Thr	Ala	Tyr	Gly	Leu	Ser	Arg	Ser	Gln	Pro	
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gtc	atg	aaa	gtt	gca	gtg	aag	atg	cta	aaa	ccc	acg	gcc	aga	tcc	agt	2287

Val	Met	Lys	Val	Ala		Lys	Met	Leu	Lys	Pro	Thr	Ala	Arg	Ser	Ser	
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gaa	aaa	caa	gct	ctc	atg	tct	gaa	ctg	aag	ata	atg	act	cac	ctg	ggg	2335
Glu	Lys	Gln	Ala	Leu	Met	Ser	Glu	Leu	Lys	Ile	Met	Thr	His	Leu	Gly	
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cca	cat	ttg	aac	att	gta	aac	ttg	ctg	gga	gcc	tgc	acc	aag	tca	ggc	2383
Pro	His	Leu	Asn	Ile	Val	Asn	Leu	Leu	Gly	Ala	Cys	Thr	Lys	Ser	Gly	
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ccc	att	tac	atc	atc	aca	gag	tat	tgc	ttc	tat	gga	gat	ttg	gtc	aac	2431
Pro	Ile	Tyr	Ile	Ile	Thr	Glu	Tyr	Cys	Phe	Tyr	Gly	Asp	Leu	Val	Asn	
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Tyr	Leu	His	Lys	Asn	Arg	Asp	Ser	Phe	Leu	Ser	His	His	Pro	Glu	Lys	
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Thr	Arg	Ser	Tyr	Val	Ile	Leu	Ser	Phe	Glu	Asn	Asn	Gly	Asp	Tyr	Met	
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cat	gat	tcg	aac	tat	gtg	tcg	aaa	ggc	agt	acc	ttt	ctg	ccc	gtg	aag	2959
His	Asp	Ser	Asn	Tyr	Val	Ser	Lys	Gly	Ser	Thr	Phe	Leu	Pro	Val	Lys	
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Trp Met Ala Pro Glu	Ile Phe Asp Asn Leu Tyr Thr Thr Ser	
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Ile Lys Ser Gly Tyr Arg Met Ala Lys Pro Asp His Ala Thr Ser Glu		
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Ile Gly Val Thr Tyr Lys Asn Glu Glu Asp Lys Leu Lys Asp Trp Glu		
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Gly Lys Arg Asn Arg His Ser Ser Gln Thr Ser Glu Glu Ser Ala		
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Asn Glu Asn Glu Lys Val Val Gln Leu Asn Ser Ser Phe Ser Leu Arg  
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Cys Phe Gly Glu Ser Glu Val Ser Trp Gln Tyr Pro Met Ser Glu Glu



Glu Ser Ser Asp Val Glu Ile Arg Asn Glu Glu Asn Asn Ser Gly Leu  
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Phe Val Thr Val Leu Glu Val Ser Ser Ala Ser Ala Ala His Thr Gly  
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Leu Tyr Thr Cys Tyr Tyr Asn His Thr Gln Thr Glu Glu Asn Glu Leu  
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Glu Gly Arg His Ile Tyr Ile Tyr Val Pro Asp Pro Asp Val Ala Phe  
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Val Pro Leu Gly Met Thr Asp Tyr Leu Val Ile Val Glu Asp Asp Asp  
130 135 140

Ser Ala Ile Ile Pro Cys Arg Thr Thr Asp Pro Glu Thr Pro Val Thr  
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Leu His Asn Ser Glu Gly Val Val Pro Ala Ser Tyr Asp Ser Arg Gln  
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Gly Phe Asn Gly Thr Phe Thr Val Gly Pro Tyr Ile Cys Glu Ala Thr  
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Val Lys Gly Lys Lys Phe Gln Thr Ile Pro Phe Asn Val Tyr Ala Leu  
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Lys Ala Thr Ser Glu Leu Asp Leu Glu Met Glu Ala Leu Lys Thr Val  
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Tyr Lys Ser Gly Glu Thr Ile Val Val Thr Cys Ala Val Phe Asn Asn  
225 230 235 240

Glu Val Val Asp Leu Gln Trp Thr Tyr Pro Gly Glu Val Lys Gly Lys  
245 250 255

Gly Ile Thr Met Leu Glu Glu Ile Lys Val Pro Ser Ile Lys Leu Val  
260 265 270

Tyr Thr Leu Thr Val Pro Glu Ala Thr Val Lys Asp Ser Gly Asp Tyr  
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Glu Cys Ala Ala Arg Gln Ala Thr Arg Glu Val Lys Glu Met Lys Lys

290

295

300

Val Thr Ile Ser Val His Glu Lys Gly Phe Ile Glu Ile Lys Pro Thr  
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Phe Ser Gln Leu Glu Ala Val Asn Leu His Glu Val Lys His Phe Val  
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Val Glu Val Arg Ala Tyr Pro Pro Arg Ile Ser Trp Leu Lys Asn  
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Asn Leu Thr Leu Ile Glu Asn Leu Thr Glu Ile Thr Thr Asp Val Glu  
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Lys Glu Glu Asp Ser Gly His Tyr Thr Ile Val Ala Gln Asn Glu Asp  
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Ala Val Lys Ser Tyr Thr Phe Glu Leu Leu Thr Gln Val Pro Ser Ser  
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Ile Leu Asp Leu Val Asp Asp His His Gly Ser Thr Gly Gly Gln Thr  
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Val Arg Cys Thr Ala Glu Gly Thr Pro Leu Pro Asp Ile Glu Trp Met  
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Ile Cys Lys Asp Ile Lys Lys Cys Asn Asn Glu Thr Ser Trp Thr Ile  
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Leu Ala Asn Asn Val Ser Asn Ile Ile Thr Glu Ile His Ser Arg Asp  
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Glu Leu Lys Leu Val Ala Pro Thr Leu Arg Ser Glu Leu Thr Val Ala  
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Ala Ala Val Leu Val Leu Leu Val Ile Val Ile Ile Ser Leu Ile Val

530

535

540

Leu Val Val Ile Trp Lys Gln Lys Pro Arg Tyr Glu Ile Arg Trp Ile  
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Ser Pro Asp Gly His Glu Tyr Ile Tyr Val Asp Pro Met Gln Leu Pro  
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Tyr Asp Ser Arg Trp Glu Phe Pro Arg Asp Gly Leu Val Leu Gly Arg  
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Val Leu Gly Ser Gly Ala Phe Gly Lys Val Val Glu Gly Thr Ala Tyr  
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Lys Pro Thr Ala Arg Ser Ser Glu Lys Gln Ala Leu Met Ser Glu Leu  
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Lys Ile Met Thr His Leu Gly Pro His Leu Asn Ile Val Asn Leu Leu  
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1015

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Ser Ser Ala Ser Ala Ala His Thr Gly Leu Tyr Thr Cys Tyr Tyr Asn	
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Val Gly Pro Tyr Ile Cys Glu Ala Thr Val Lys Gly Lys Lys Phe Gln	
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Leu Glu Met Glu Ala Leu Lys Thr Val Tyr Lys Ser Gly Glu Thr Ile	
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Thr Tyr Pro Gly Glu Val Lys Gly Lys Gly Ile Thr Met Leu Glu Glu	
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Ile Lys Val Pro Ser Ile Lys Leu Val Tyr Thr Leu Thr Val Pro Glu	
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Thr Arg Glu Val	Lys Glu Met Lys	Lys Val Thr Ile	Ser Val His Glu	
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Lys Gly Phe Ile	Glu Ile Lys Pro	Thr Phe Ser Gln	Leu Glu Ala Val	
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Asn Leu His Glu	Val Lys His Phe	Val Val Glu Val	Arg Ala Tyr Pro	
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cct ccc agg ata	tcc tgg ctg aaa	aac aat ctg act	ctg att gaa aat	1471
Pro Pro Arg Ile	Ser Trp Leu Lys	Asn Asn Leu Thr	Leu Ile Glu Asn	
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ctc act gag atc	acc act gat gtg	gaa aag att cag	gaa ata agg tat	1519
Leu Thr Glu Ile	Thr Thr Asp Val	Glu Lys Ile Gln	Glu Ile Arg Tyr	
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cga agc aaa tta	aag ctg atc cgt	gct aag gaa gaa	gac agt ggc cat	1567
Arg Ser Lys Leu	Lys Leu Ile Arg	Ala Lys Glu Glu	Asp Ser Gly His	
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tat act att gta	gct caa aat gaa	gat gct gtg aag	agc tat act ttt	1615
Tyr Thr Ile Val	Ala Gln Asn Glu	Asp Ala Val Lys	Ser Tyr Thr Phe	
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gaa ctg tta act	caa gtt cct tca	tcc att ctg gac	ttg gtc gat gat	1663
Glu Leu Leu Thr	Gln Val Pro Ser	Ile Leu Asp Leu	Val Val Asp Asp	
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cac cat ggc tca	act ggg gga cag	acg gtg agg tgc	aca gct gaa ggc	1711
His His Gly Ser	Thr Gly Gly Gln	Thr Val Arg Cys	Thr Ala Glu Gly	
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acg ccg ctt cct	gat att gag tgg	atg ata tgc aaa	gat att aag aaa	1759
Thr Pro Leu Pro	Asp Ile Glu Trp	Met Ile Cys Lys	Asp Ile Lys Lys	
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tgt aat aat gaa	act tcc tgg act	att ttg gcc aac	aat gtc tca aac	1807
Cys Asn Asn Glu	Thr Ser Trp Thr	Ile Leu Ala Asn	Asn Val Ser Asn	
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Ile Ile Thr Glu	Ile His Ser Arg	Asp Arg Ser Thr	Val Glu Gly Arg	
	475	480	485	
gtg act ttc gcc	aaa gtg gag gag	acc atc gcc gtg	cga tgc ctg gct	1903
Val Thr Phe Ala	Lys Val Glu Glu	Thr Ile Ala Val	Arg Cys Leu Ala	
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Lys Asn Leu Leu	Gly Ala Glu Asn	Arg Glu Leu Lys	Leu Val Ala Pro	
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acc ctg cgt tct	gaa ctc acg gtg	gct gct gca gtc	ctg gtg ctg ttg	1999
Thr Leu Arg Ser	Glu Leu Thr Val	Ala Ala Val Val	Leu Val Leu Leu	

520

530

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Lys Pro Arg Tyr Glu Ile Arg Trp Arg Val Ile Glu Ser Ile Ser Pro	
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Asp Gly His Glu Tyr Ile Tyr Val Asp Pro Met Gln Leu Pro Tyr Asp	
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Ser Arg Trp Glu Phe Pro Arg Asp Gly Leu Val Leu Gly Arg Val Leu	
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Gly Ser Gly Ala Phe Gly Lys Val Val Glu Gly Thr Ala Tyr Gly Leu	
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Met Thr His Leu Gly Pro His Leu Asn Ile Val Asn Leu Leu Gly Ala	
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Cys Thr Lys Ser Gly Pro Ile Tyr Ile Ile Thr Glu Tyr Cys Phe Tyr	
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Gly Asp Leu Val Asn Tyr Leu His Lys Asn Arg Asp Ser Phe Leu Ser	
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cac cac cca gag aag cca aag aaa gag ctg gat atc ttt gga ttg aac	2527
His His Pro Glu Lys Pro Lys Lys Glu Leu Asp Ile Phe Gly Leu Asn	
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Pro Ala Asp Glu Ser Thr Arg Ser Tyr Val Ile Leu Ser Phe Glu Asn	
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Asn Gly Asp Tyr Met Asp Met Lys Gln Ala Asp Thr Thr Gln Tyr Val	
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Pro Met Leu Glu Arg Lys Glu Val Ser Lys Tyr Ser Asp Ile Gln Arg	
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Ser Leu Tyr Asp Arg Pro Ala Ser Tyr Lys Lys Lys Ser Met Leu Asp	



760

770

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Phe Leu Ala Ser Lys Asn Cys Val His Arg Asp Leu Ala Ala Arg Asn	
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Val Leu Leu Ala Gln Gly Lys Ile Val Lys Ile Cys Asp Phe Gly Leu	
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gcc aaa atc atc atg cat gat tcg aac tat gtg tcg aaa ggc agt acc	2959
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Asn Leu Leu Pro Gly Gln Tyr Lys Lys Ser Tyr Glu Lys Ile His Leu	
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Phe Val Thr Val Leu Glu Val Ser Ser Ala Ser Ala Ala His Thr Gly  
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130 135 140

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Leu His Asn Ser Glu Gly Val Val Pro Ala Ser Tyr Asp Ser Arg Gln  
165 170 175

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Val Lys Gly Lys Lys Phe Gln Thr Ile Pro Phe Asn Val Tyr Ala Leu  
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Tyr Lys Ser Gly Glu Thr Ile Val Val Thr Cys Ala Val Phe Asn Asn  
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 gttgcacttt tgaatgtcca aaatttatat tttagaaata ataaaaagaa agatacttac 6474  
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 aatacaaaat gtattacgaa tgcccctgtt catgtttttg ttttaaaacg tgtaaagaa 6594  
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<210> 27

<211> 1089

<212> PRT

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (560)..(560)

<223> The 'Xaa' at location 560 stands for Lys, Asn, Arg, Ser, Thr, Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp,

Cys, or Phe.

<220>  
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<222> (561)..(561)  
<223> The 'Xaa' at location 561 stands for Lys, Asn, Arg, Ser, Thr, Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp, Cys, or Phe.

<220>  
<221> misc\_feature  
<222> (562)..(562)  
<223> The 'Xaa' at location 562 stands for Lys, Asn, Arg, Ser, Thr, Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp, Cys, or Phe.

<220>  
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<223> The 'Xaa' at location 563 stands for Lys, Asn, Arg, Ser, Thr, Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp, Cys, or Phe.

<220>  
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<223> The 'Xaa' at location 564 stands for Lys, Asn, Arg, Ser, Thr, Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp, Cys, or Phe.

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<222> (566)..(566)  
<223> The 'Xaa' at location 566 stands for Lys, Asn, Arg, Ser, Thr, Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp, Cys, or Phe.

<220>  
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<223> The 'Xaa' at location 567 stands for Lys, Asn, Arg, Ser, Thr, Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp, Cys, or Phe.

<220>  
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<223> The 'Xaa' at location 568 stands for Lys, Asn, Arg, Ser, Thr, Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp, Cys, or Phe.

<220>  
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<223> The 'Xaa' at location 569 stands for Lys, Asn, Arg, Ser, Thr, Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp, Cys, or Phe.

<220>  
<221> misc\_feature



<222> (570)..(570)  
 <223> The 'Xaa' at location 570 stands for Lys, Asn, Arg, Ser, Thr,  
 Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp,  
 Cys, or Phe.

<220>  
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 <223> The 'Xaa' at location 571 stands for Lys, Asn, Arg, Ser, Thr,  
 Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp,  
 Cys, or Phe.

<220>  
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 <222> (841)..(841)  
 <223> The 'Xaa' at location 841 stands for Lys, Arg, Thr, or Ile.

<220>  
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 <222> (842)..(842)  
 <223> The 'Xaa' at location 842 stands for Lys, Asn, Arg, Ser, Thr,  
 Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp,  
 Cys, or Phe.

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 <223> The 'Xaa' at location 843 stands for Lys, Asn, Arg, Ser, Thr,  
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 Cys, or Phe.

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 <223> The 'Xaa' at location 844 stands for Lys, Asn, Arg, Ser, Thr,  
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 Cys, or Phe.

<220>  
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 <223> The 'Xaa' at location 845 stands for Lys, Asn, Arg, Ser, Thr,  
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 Cys, or Phe.

<220>  
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 <223> The 'Xaa' at location 846 stands for Lys, Asn, Arg, Ser, Thr,  
 Ile, Met, Glu, Asp, Gly, Ala, Val, Gln, His, Pro, Leu, Tyr, Trp,  
 Cys, or Phe.

<220>  
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 <223> The 'Xaa' at location 847 stands for Lys, Asn, Arg, Ser, Thr,  
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 Cys, or Phe.

<220>

<221> misc\_feature  
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 <223> The 'Xaa' at location 848 stands for Asn, Ser, Thr, Ile, Asp,  
 Gly, Ala, Val, His, Arg, Pro, Leu, Tyr, Cys, or Phe.

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Met Gly Thr Ser His Pro Ala Phe Leu Val Leu Gly Cys Leu Leu Thr  
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Gly Leu Ser Leu Ile Leu Cys Gln Leu Ser Leu Pro Ser Ile Leu Pro  
 20 25 30

Asn Glu Asn Glu Lys Val Val Gln Leu Asn Ser Ser Phe Ser Leu Arg  
 35 40 45

Cys Phe Gly Glu Ser Glu Val Ser Trp Gln Tyr Pro Met Ser Glu Glu  
 50 55 60

Glu Ser Ser Asp Val Glu Ile Arg Asn Glu Glu Asn Asn Ser Gly Leu  
 65 70 75 80

Phe Val Thr Val Leu Glu Val Ser Ser Ala Ser Ala Ala His Thr Gly  
 85 90 95

Leu Tyr Thr Cys Tyr Tyr Asn His Thr Gln Thr Glu Glu Asn Glu Leu  
 100 105 110

Glu Gly Arg His Ile Tyr Ile Tyr Val Pro Asp Pro Asp Val Ala Phe  
 115 120 125

Val Pro Leu Gly Met Thr Asp Tyr Leu Val Ile Val Glu Asp Asp Asp  
 130 135 140

Ser Ala Ile Ile Pro Cys Arg Thr Thr Asp Pro Glu Thr Pro Val Thr  
 145 150 155 160

Leu His Asn Ser Glu Gly Val Val Pro Ala Ser Tyr Asp Ser Arg Gln  
 165 170 175

Gly Phe Asn Gly Thr Phe Thr Val Gly Pro Tyr Ile Cys Glu Ala Thr  
 180 185 190

Val Lys Gly Lys Lys Phe Gln Thr Ile Pro Phe Asn Val Tyr Ala Leu  
 195 200 205

Lys Ala Thr Ser Glu Leu Asp Leu Glu Met Glu Ala Leu Lys Thr Val

210

215

220

Tyr Lys Ser Gly Glu Thr Ile Val Val Thr Cys Ala Val Phe Asn Asn  
 225 230 235 240

Glu Val Val Asp Leu Gln Trp Thr Tyr Pro Gly Glu Val Lys Gly Lys  
 245 250 255

Gly Ile Thr Met Leu Glu Glu Ile Lys Val Pro Ser Ile Lys Leu Val  
 260 265 270

Tyr Thr Leu Thr Val Pro Glu Ala Thr Val Lys Asp Ser Gly Asp Tyr  
 275 280 285

Glu Cys Ala Ala Arg Gln Ala Thr Arg Glu Val Lys Glu Met Lys Lys  
 290 295 300

Val Thr Ile Ser Val His Glu Lys Gly Phe Ile Glu Ile Lys Pro Thr  
 305 310 315 320

Phe Ser Gln Leu Glu Ala Val Asn Leu His Glu Val Lys His Phe Val  
 325 330 335

Val Glu Val Arg Ala Tyr Pro Pro Arg Ile Ser Trp Leu Lys Asn  
 340 345 350

Asn Leu Thr Leu Ile Glu Asn Leu Thr Glu Ile Thr Thr Asp Val Glu  
 355 360 365

Lys Ile Gln Glu Ile Arg Tyr Arg Ser Lys Leu Lys Leu Ile Arg Ala  
 370 375 380

Lys Glu Glu Asp Ser Gly His Tyr Thr Ile Val Ala Gln Asn Glu Asp  
 385 390 395 400

Ala Val Lys Ser Tyr Thr Phe Glu Leu Leu Thr Gln Val Pro Ser Ser  
 405 410 415

Ile Leu Asp Leu Val Asp Asp His His Gly Ser Thr Gly Gly Gln Thr  
 420 425 430

Val Arg Cys Thr Ala Glu Gly Thr Pro Leu Pro Asp Ile Glu Trp Met  
 435 440 445

Ile Cys Lys Asp Ile Lys Lys Cys Asn Asn Glu Thr Ser Trp Thr Ile

450

455

460

Leu Ala Asn Asn Val Ser Asn Ile Ile Thr Glu Ile His Ser Arg Asp  
 465 470 475 480

Arg Ser Thr Val Glu Gly Arg Val Thr Phe Ala Lys Val Glu Glu Thr  
 485 490 495

Ile Ala Val Arg Cys Leu Ala Lys Asn Leu Leu Gly Ala Glu Asn Arg  
 500 505 510

Glu Leu Lys Leu Val Ala Pro Thr Leu Arg Ser Glu Leu Thr Val Ala  
 515 520 525

Ala Ala Val Leu Val Leu Leu Val Ile Val Ile Ile Ser Leu Ile Val  
 530 535 540

Leu Val Val Ile Trp Lys Gln Lys Pro Arg Tyr Glu Ile Arg Trp Xaa  
 545 550 555 560

Xaa Xaa Xaa Xaa Ile Xaa Xaa Xaa Xaa Xaa Xaa Tyr Ile Tyr Val Asp  
 565 570 575

Pro Met Gln Leu Pro Tyr Asp Ser Arg Trp Glu Phe Pro Arg Asp Gly  
 580 585 590

Leu Val Leu Gly Arg Val Leu Gly Ser Gly Ala Phe Gly Lys Val Val  
 595 600 605

Glu Gly Thr Ala Tyr Gly Leu Ser Arg Ser Gln Pro Val Met Lys Val  
 610 615 620

Ala Val Lys Met Leu Lys Pro Thr Ala Arg Ser Ser Glu Lys Gln Ala  
 625 630 635 640

Leu Met Ser Glu Leu Lys Ile Met Thr His Leu Gly Pro His Leu Asn  
 645 650 655

Ile Val Asn Leu Leu Gly Ala Cys Thr Lys Ser Gly Pro Ile Tyr Ile  
 660 665 670

Ile Thr Glu Tyr Cys Phe Tyr Gly Asp Leu Val Asn Tyr Leu His Lys  
 675 680 685

Asn Arg Asp Ser Phe Leu Ser His His Pro Glu Lys Pro Lys Lys Glu

690

695

700

Leu Asp Ile Phe Gly Leu Asn Pro Ala Asp Glu Ser Thr Arg Ser Tyr  
 705 710 715 720

Val Ile Leu Ser Phe Glu Asn Asn Gly Asp Tyr Met Asp Met Lys Gln  
 725 730 735

Ala Asp Thr Thr Gln Tyr Val Pro Met Leu Glu Arg Lys Glu Val Ser  
 740 745 750

Lys Tyr Ser Asp Ile Gln Arg Ser Leu Tyr Asp Arg Pro Ala Ser Tyr  
 755 760 765

Lys Lys Lys Ser Met Leu Asp Ser Glu Val Lys Asn Leu Leu Ser Asp  
 770 775 780

Asp Asn Ser Glu Gly Leu Thr Leu Leu Asp Leu Leu Ser Phe Thr Tyr  
 785 790 795 800

Gln Val Ala Arg Gly Met Glu Phe Leu Ala Ser Lys Asn Cys Val His  
 805 810 815

Arg Asp Leu Ala Ala Arg Asn Val Leu Leu Ala Gln Gly Lys Ile Val  
 820 825 830

Lys Ile Cys Asp Phe Gly Leu Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 835 840 845

Tyr Val Ser Lys Gly Ser Thr Phe Leu Pro Val Lys Trp Met Ala Pro  
 850 855 860

Glu Ser Ile Phe Asp Asn Leu Tyr Thr Thr Leu Ser Asp Val Trp Ser  
 865 870 875 880

Tyr Gly Ile Leu Leu Trp Glu Ile Phe Ser Leu Gly Gly Thr Pro Tyr  
 885 890 895

Pro Gly Met Met Val Asp Ser Thr Phe Tyr Asn Lys Ile Lys Ser Gly  
 900 905 910

Tyr Arg Met Ala Lys Pro Asp His Ala Thr Ser Glu Val Tyr Glu Ile  
 915 920 925

Met Val Lys Cys Trp Asn Ser Glu Pro Glu Lys Arg Pro Ser Phe Tyr

930

935

940

His Leu Ser Glu Ile Val Glu Asn Leu Leu Pro Gly Gln Tyr Lys Lys  
 945 950 955 960

Ser Tyr Glu Lys Ile His Leu Asp Phe Leu Lys Ser Asp His Pro Ala  
 965 970 975

Val Ala Arg Met Arg Val Asp Ser Asp Asn Ala Tyr Ile Gly Val Thr  
 980 985 990

Tyr Lys Asn Glu Glu Asp Lys Leu Lys Asp Trp Glu Gly Gly Leu Asp  
 995 1000 1005

Glu Gln Arg Leu Ser Ala Asp Ser Gly Tyr Ile Ile Pro Leu Pro  
 1010 1015 1020

Asp Ile Asp Pro Val Pro Glu Glu Glu Asp Leu Gly Lys Arg Asn  
 1025 1030 1035

Arg His Ser Ser Gln Thr Ser Glu Glu Ser Ala Ile Glu Thr Gly  
 1040 1045 1050

Ser Ser Ser Ser Thr Phe Ile Lys Arg Glu Asp Glu Thr Ile Glu  
 1055 1060 1065

Asp Ile Asp Met Met Asp Asp Ile Gly Ile Asp Ser Ser Asp Leu  
 1070 1075 1080

Val Glu Asp Ser Phe Leu  
 1085

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